

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: FONG et al. Examiner: Rodriguez, G.  
Serial No.: 10/813,562 Group Art Unit: 2651  
Filed: March 30, 2004 Docket No.: HSJ920030165US1  
(HITG.048-549)  
Title: METHOD FOR CONTROLLING A BURNISH CYCLE TO MINIMIZE  
CYCLE TIME

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence and the papers, as described hereinabove, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop APPEAL, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on September 7, 2007.

By: 

David W. Lynch

**APPEAL BRIEF**

MAIL STOP APPEAL  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Dear Sir:

This is an Appeal Brief submitted pursuant to 37 C.F.R. § 41.37 for the above-referenced patent application. Please charge Deposit Account No. 50-2587 (HSJ920030165US1) in the amount of \$500.00 for this brief in support of appeal as indicated in 37 C.F.R. § 41.20(b)(2).

**I. Real Party in Interest**

The real party in interest is HITACHI GLOBAL STORAGE TECHNOLOGIES NETHERLANDS B.V., having a place of business at Locatellikade 1, Parnassustoren, 1076 AZ Amsterdam, The Netherlands (hereinafter called HITACHI).

**II. Related Appeals and Interferences**

Appellants are unaware of any related appeals, interferences or judicial proceedings.

**III. Status of Claims**

Claims 1-15 were rejected. Claims 1-15 are presented for appeal and may be found in the attached Appendix of Appealed Claims in their present form.

**IV. Status of Amendments**

An initial Office Action was mailed on November 29, 2005. A response to the initial Office Action was mailed on February 28, 2007. A second Office Action was mailed on May 31, 2006. A response to the initial Office Action was mailed on August 31, 2006. A final Office Action was mailed on November 27, 2006. A response to the final Office Action was filed on April 25, 2007 under 37 C.F.R. § 1.116. By way of Advisory Action mailed May 3, 2007, the remarks presented in the response of September 13, 2005 were noted as being entered into the record, but were deemed to not place the application in condition for allowance.

**V. Summary of Invention**

A method, apparatus and program storage device for minimizing the cycle time of a burnish test cycle is claimed.

Independent claim 1 recites a method for minimizing the cycle time of a burnish test cycle. The method includes performing burnish operations (446, page 11, line 10-11), measuring an initial MR resistance for a head (810, page 13, line 11), determining whether the measured MR resistance indicates the head has clearance (820, page 13, lines 12-13) and

completing the test cycle when the head is determined to have clearance (830, page 13, line 15).

Independent claim 6 recites a drive controller for minimizing the cycle time of a burnish test cycle, the drive controller. There drive controller (900, page 14, line 9) includes memory for storing data therein (992, page 14, line 9) and a processor (996, page 14, line 10), coupled to the memory, the processor (996, page 14, line 10) being configured for performing burnish operations (446, page 11, line 10-11), measuring an initial MR resistance for a head (810, page 13, line 11), determining whether the measured MR resistance indicates the head has clearance (820, page 13, lines 12-13) and completing the test cycle when the head is determined to have clearance (830, page 13, line 15).

Independent claim 11 recites a program storage device (968, page 14, line 9) readable by a computer, the program storage device tangibly embodying one or more programs of instructions (690, page 14, line 8) executable by the computer to perform operations for minimizing the cycle time of a burnish cycle. The operations include performing an initial MR resistance measurement for a head (810, page 13, line 11), determine whether the measured MR resistance indicates the head has clearance (820, page 13, lines 12-13) and completing the test cycle when the head is determined to have clearance (830, page 13, line 15).

## **VI. Grounds of Rejection**

Appellant has attempted to comply with new rule 37 C.F.R. § 41.37(c) by providing the Office Action's grounds of rejection verbatim, followed by an argument section corresponding thereto.

- A. In paragraph 2 on page 2 of the Office Action, claims 1, 2, 4-7, 9-12, 14 and 15 were rejected under § 103(a) as being unpatentable over Egan et al. in view of Haddock.
- B. In paragraph 3 on page 4 of the Office Action, claims 3, 8 and 13 were rejected under § 103(a) as being unpatentable over Egan et al. and Haddock in further view of Smith.

## **VII. Argument**

### **A. INDEPENDENT CLAIMS 1, 6 AND 11 ARE PATENTABLE OVER EGAN ET AL. IN VIEW OF HADDOCK.**

#### **1. Pinarbasi, Gill and Ohsawa et al., alone or in combination Fail To Disclose, Teach Or Suggest the Limitations of Claims 1, 6 and 11.**

Independent claims 1, 6 and 11 recite performing an initial MR resistance measurement for a head.

Egan et al. fail to even mention measuring an MR resistance for a head. Rather, Egan et al. monitor for a high fly write condition. To identify the fly high write condition, Egan et al. identifies when a low frequency range signal is present .

Accordingly, Egan et al. do not measure MR resistance.

Haddock and Smith fail to overcome the deficiencies of Egan et al. Haddock teaches burnishing a wear pad to obtain a desired fly height. However, Haddock fails to mention measuring an initial MR resistance for a head.

Smith merely teaches the measurement of absolute clearance between the MR transducer and the medium is for a nominal medium-transducer velocity. Smith suggests changing the velocity of the medium to identify a velocity that results in a desired fly height.

However, Smith fails to disclose, teach or suggest measuring an initial MR resistance for a head

Independent claims 1, 6 and 11 also recite determining whether the measured MR resistance indicates the head has clearance.

In contrast, Eagan et al. focus on monitoring a high fly write condition. The high fly write condition occurs when the write head increases in temperature thereby causing the write pole to protrude. Accordingly, Eagan et al. are not relevant to measuring a head's fly height, but rather is only relevant to measuring a high fly write condition. Eagan et al. only detects a condition that occurs when the write pole protrudes; not when the fly height does not meet a fly height specification.

Haddock also fails to mention determining whether the measured MR resistance indicates the head has clearance. Smith merely teaches the measurement of absolute clearance between the MR transducer and the medium is for a nominal medium-transducer velocity. Smith suggests changing the velocity of the medium to identify a velocity that results in a desired fly height.

Accordingly, Haddock and Smith do not determine whether the measured MR resistance indicates the head has clearance because they do not even measure MR resistance.

Independent claims 1, 6 and 11 also recite completing the test cycle when the head is determined to have clearance.

As described above, Eagan et al. do not determine when a measured MR resistance indicates that the head has clearance. Accordingly, Eagan et al. do not complete the test cycle when the head is determined to have clearance.

Likewise, as described above, Haddock and Smith fail to disclose, teach or suggest measuring an initial MR resistance for a head and therefore do not determine when a measured MR resistance indicates that the head has clearance.


Accordingly, Eagan et al., Haddock and Smith, alone or in combination, fail to disclose, teach or suggest Applicants' invention as recited in independent claims 1, 6 and 11.

**VIII. Conclusion**

In view of the above, Appellants submit that the rejections are improper, the claimed invention is patentable, and that the rejections of claims 1-15 should be reversed. Appellants respectfully request reversal of the rejections as applied to the appealed claims and allowance of the entire application.

Respectfully submitted,

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**APPENDIX OF APPEALED CLAIMS FOR APPLICATION NO. 10/813,562**

1           1.       (Previously Presented)       A method for minimizing the cycle time of  
2   a burnish test cycle, comprising:  
3           performing burnish operations;  
4           measuring an initial MR resistance for a head;  
5           determining whether the measured MR resistance indicates the head has  
6   clearance; and  
7           completing the test cycle when the head is determined to have clearance.

1           2.       (Previously Presented)       The method of claim 1 further comprising:  
2           reducing the fly-height of the head when the measured MR resistance indicates  
3   the head does not have clearance;  
4           perform a subsequent burnish operation;  
5           measuring the MR resistance again; and  
6           returning to determine whether the measured MR resistance indicates the head  
7   has clearance.

1           3.       (Previously Presented)       The method of claim 2, wherein the  
2   reducing the fly-height of the head further comprises selecting at least one process from  
3   the group comprising reducing the pressure within the disclosure, reducing the spindle  
4   speed and increasing the pre-load to the head.

1           4.       (Original)       The method of claim 1, wherein the determining whether  
2       measured MR resistance indicates the head has clearance further comprises comparing  
3       the absolute MR resistance measurements to a threshold to identify whether the head  
4       has clearance.

1           5.       (Original)       The method of claim 1, wherein the determining whether  
2       measured MR resistance indicates the head has clearance further comprises comparing  
3       the MR resistance rate of change to a threshold to identify whether the head has  
4       clearance.

1           6.       (Previously Presented)       A drive controller for minimizing the cycle  
2       time of a burnish test cycle, the drive controller comprising:  
3               memory for storing data therein; and  
4               a processor, coupled to the memory, the processor being configured for  
5       performing burnish operations, measuring an initial MR resistance for a head,  
6       determining whether the measured MR resistance indicates the head has clearance and  
7       completing the test cycle when the head is determined to have clearance.

1           7.       (Previously Presented)       The method of claim 6, wherein the  
2   processor is further configured for reducing the fly-height of the head when the  
3   measured MR resistance indicates the head does not have clearance, perform a  
4   subsequent burnish operation, measuring the MR resistance again and returning to  
5   determine whether the measured MR resistance indicates the head has clearance.

1           8.       (Previously Presented)       The method of claim 7, wherein the  
2   processor reducing the fly-height of the head by selecting at least one process from the  
3   group comprising reducing the pressure within the disclosure, reducing the spindle  
4   speed and increasing the pre-load to the head.

1           9.       (Original)       The method of claim 6, wherein the processor determines  
2   whether measured MR resistance indicates the head has clearance by comparing the  
3   absolute MR resistance measurements to a threshold to identify whether the head has  
4   clearance.

1           10.      (Original)       The method of claim 6, wherein the processor determines  
2   whether measured MR resistance indicates the head has clearance by comparing the MR  
3   resistance rate of change to a threshold to identify whether the head has clearance.

1           11.     (Original)     A program storage device readable by a computer, the  
2     program storage device tangibly embodying one or more programs of instructions  
3     executable by the computer to perform operations for minimizing the cycle time of a  
4     burnish cycle, the operations comprising:  
5             performing an initial MR resistance measurement for a head;  
6             determine whether the measured MR resistance indicates the head has clearance;  
7     and  
8             completing the test cycle when the head is determined to have clearance.

1           12.     (Previously Presented)     The program storage device of claim 11  
2     further comprising:  
3             performing burnish operations;  
4             measuring an initial MR resistance for a head;  
5             determining whether the measured MR resistance indicates the head has  
6     clearance; and  
7             completing the test cycle when the head is determined to have clearance.

1           13.     (Previously Presented)     The program storage device of claim 12,  
2     wherein the reducing the fly-height of the head further comprises selecting at least one  
3     process from the group comprising reducing the pressure within the disclosure, reducing  
4     the spindle speed and increasing the pre-load to the head.

1           14.     (Original)     The program storage device of claim 11, wherein the  
2     determining whether measured MR resistance indicates the head has clearance further  
3     comprises comparing the absolute MR resistance measurements to a threshold to  
4     identify whether the head has clearance.

1           15.     (Original)     The program storage device of claim 11, wherein the  
2     determining whether measured MR resistance indicates the head has clearance further  
3     comprises comparing the MR resistance rate of change to a threshold to identify whether  
4     the head has clearance.

**APPENDIX OF EVIDENCE FOR APPLICATION NO. 10/813,562**

Appellants are unaware of any evidence submitted in this application pursuant to 37 C.F.R. §§ 1.130, 1.131, and 1.132.

**APPENDIX OF RELATED PROCEEDINGS FOR APPLICATION NO.  
10/813,562**

As stated in Section II above, Appellants are unaware of any related appeals, interferences or judicial proceedings.